

REMARKS/ARGUMENTS

Prior to this amendment, claims 1-54 and 56-95 were pending. By this amendment, claims 1, 43, 44, 68, 69, and 94 are amended leaving claims 1-54 and 56-95 pending consideration. Applicants aver that no new matter has been added with this response.

In the Office Action, the Examiner rejected claims 1-54 and 56-95 under 35 U.S.C. §112, first paragraph, and claims 1-43 and 68-95 under 35 U.S.C. §112, second paragraph, rejected claims 1-12, 14-15, 17-19 and 21-43 under 35 U.S.C. §103(a) as being anticipated by U.S. Patent No. 6,018,359 issued to Kermode et al. (hereinafter "Kermode") in view of U.S. Patent No. 6,882,618 issued to Sakoda et al. (hereinafter "Sakoda"), and rejected claims 68-74, 77, 80-85 and 87-94 under 35 U.S.C. §103(a) as being anticipated by U.S. Patent No. 5,926,205 issued to Krause et al. (hereinafter "Krause") in view of Sakoda. Applicants aver that no new matter has been added in this response.

Examiner Interview

Applicants appreciate the telephone interview with the Examiner on August 22, 2006, where proposed claim amendments and the cited references were discussed in general.

§112/§103 rejections

Claims 1, 43, 44, 68, 69, and 94

In the Office Action, the Examiner rejected claims 1-54 and 56-95 under 35 U.S.C. §112, first paragraph, and claims 1-43 and 68-95 under 35 U.S.C. §112, second paragraph, and under 35 U.S.C. §103(a) rejected claims 1-12, 14-15, 17-19 and 21-43 as being anticipated by Kermode in view of Sakoda, and rejected claims 68-74, 77, 80-85 and 87-94 over Krause in view of Sakoda.

In the Office Action, the Examiner states that the limitation "the output symbols are encoded to be served to the client in an order independent of output symbols previously received by the client" is not disclosed in the specification, the limitations recited in claims 44, 86, and 95 are contradictory with the specification, and whether the limitation of "the output symbols" in line 12 are the "output symbols" in line 11 of claim 1.

The Examiner also states in the Office Action that Kermode discloses a method and system for scheduling a media object for transmission between a server and a client, which include partitioning a media object into segments of blocks, where the client will wait until a entire block is received before playing the block, determining which one or more channels to server each segment, determining a rate as which to serve each segment, determining a schedule pair for each channel which include a time at which the client may start receiving on the channel and a time at which the client may stop receiving on the channel. In the Office Action the Examiner also states that Kermode discloses a block encoder configured to receive segments of a media object and a transmitter for serving the segments on one or more channels at a predetermine rate, and that Sakoda discloses a symbol stream produced by a symbol mapping circuit and a transmission symbol stream is multiplexed an arranged such that the data forming the received and encoded symbol stream is rearranged to the original order and that Krause discloses an apparatus for servicing media object, where the apparatus includes a block encoder, a transmitter, and dividing a video program into a number of segments having N ordered subsequences of elements that are encoded to form ordered subsequences of elements that are transmitted pointing to Figure 1, and cols. 4-9 *et seq.* of Kermode, Figures 1-2, and column 8-10 *et seq.* of Sakoda, and cols. 6-9 *et seq.* of Krause. Applicants respectfully traverse the rejections.

Claims 1, 43, 68, 69, and 94 have been amended to more clearly recite the claimed subject matter with regard to blocks are encoded such that when the output symbols are transmitted to a client, the output symbols are transmitted to the client in a manner that is independent of the output symbols transmitted. Claim 44 has been amended to more clearly recite the claim subject matter of generating output symbols using a chain reaction code.

Applicants submit that Kermode, Sakoda, and Krause alone or in combination do not disclose all of the elements of amended claims 1, 43, 68, 69, and 94. For example amended claims 1, 43, 68, 69, and 94 partially recite "wherein the output symbols are encoded such that when the output symbols are transmitted to the client, the output symbols are transmitted in a manner that is independent of the output symbols transmitted to the client".

Kermode describes a generalized scheme using a looping process where a client can simultaneously download segments, and portions thereof, from multiple channels. This

approach deals with clients joining after a sequence of blocks (portions of the segments) have already begun being transmitted to the client. The blocks downloaded from each of the segments being transmitted are joined together in a sequence to form a contiguous segment for playback. Uncoordinated looping is often very bandwidth inefficient, as a client might have to receive and process packets that correspond to blocks already received in order to get to the packets that the client happens to need and does not already have. Looping can be coordinated, wherein a client indicates where it is at in the receiving cycle and the transmitter transmits accordingly, but that requires a back channel. Therefore, Kermode discloses transmitting the blocks in a particular repetitive order so that the receiver can obtain missing output symbols in order to complete the segment which is in distinct contrast to the claimed subject matter where the output symbols are *transmitted in a manner that is independent of the output symbols transmitted to the client* such that coordination between the transmitter and receiver is not needed (emphasis added).

Sakoda discloses a transmitter and receiver combination that uses multiplexed multi-carrier modulated signal to transmit an M number of channels over a transmission path. A path estimation circuit is used to determine the characteristics of the transmission path so as to correct for signal issues caused by the transmission path. Sakoda relies on decoding a bitstream that has been encoded using forward error correction (FEC) based on a convolution code (i.e., Viterbi decoding). In such FEC encoding schemes, the number of output symbols ("N") relative to the number of input symbols ("K") not much larger and is fixed before encoding begins. The number of redundant output symbols, $R = N - K$, is therefore also fixed, so the transmitter needs to know or guess at a loss rate of the transmission link ahead of time. This leads to inefficiencies if the loss rate is overestimated, and can lead to failure to recover input symbols if the loss rate is underestimated. In Sakoda, the path estimation process is concerned with phase offsets and not the amount of packet loss which is handled by the FEC, therefore if a sufficient number of packets are lost in Sakoda to exceed N, the data cannot be recovered with subsequent packet transmissions unless they are repeat transmissions. Sakoda discloses transmitting output symbols in a particular orthogonal manner that needs to be coordinated with the receiver such that the receiver can reconstruct the data in a certain order (see Sakoda col. 4, line 20 through col. 7 line 30).

In contrast, the claimed partitioning is done so that the output symbols are encoded to be transmitted to the client in a manner that is independent of output symbols transmitted to the client. As should be apparent, if the output symbols are transmitted in a manner that is independent of what output symbols were transmitted to the client, as the client does not require a particular transmission order to decode the data, different clients having received different output symbols (because of transmission losses or because the clients started listening at different times) can continue receiving the same stream and have the received output symbols be useful. As should also be apparent, if the manner of transmitting the output symbols is done independent of what output symbols were transmitted to and received by a client, there is no need for a back channel because the transmitter does not need to care what manner the output symbols were transmitted, received and what is not received.

Krause is directed to an arrangement of blocks in an interleaved fashion and is concerned with clients joining a stream at different times. With the claimed output symbol generation, such structures are not needed, as enough output symbols are available. As the systems of Krause appear to rely on elements being in a particular order, Krause would not be combinable with Sakoda or Kermode to teach output symbols generated are independent of when a client begins a reception.

Therefore Applicants submit that Sakoda and Krause fail to make up for what Kermode lacks. Thus, amended claims 1, 43, 68, 69, and 94 are allowable over the cited references.

Dependent claims 2-42, 45-54, 56-67, 70-93, and 95

Claims 2-42 which depend from claim 1, and claims 45-54 and 56-67, which depend from claim 44, and claims 70-93 which depend from claim 69, and claim 95 which depends from claim 94 are allowable for at least the reasons discussed in relation to claims 1, 44, 69, and 94, as well as the limitations they recite.

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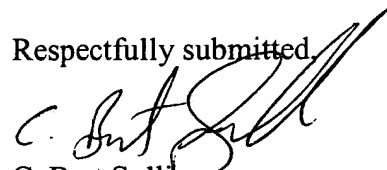
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CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 415-576-0200.

Respectfully submitted,



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